



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,040	07/03/2003	Myung-Ryul Choi	1293.1733	4263

21171 7590 10/04/2005

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

CHEN, TIANJIE

ART UNIT PAPER NUMBER

2652

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,040

Applicant(s)

CHOI ET AL.

Examiner

Tianjie Chen

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Final Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morinaga (JP 8-203259A) in view of Park et al (EP 1 207 532 A2).

Claims 1 and 2, Morinaga shows a disk tray 2 for a disk drive in Fig. 5 that slides in and out of the disk drive 1, the disk tray including one or more resonators 10 mounted on a lower surface of the disk tray (Figs. 1-3) to reduce noise, wherein each of the one or more resonators includes: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of each resonator (Fig. 3); and a resonance container surrounding the through hole and having a predetermined volume.

Morinaga does not explicitly show that the resonators selectively reduce noise of a predetermined frequency band; and the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Park et al shows a resonator 40, which has roughly a same natural resonance frequency as the movable plate. ([0017], lines 3-4) thus effectively reduce a vibration (noise) generated when a disk spins ([0007]). One of ordinary skill in the art would have been motivated to use the resonator taught by Park et al to replace Morinaga's resonator thus effectively reducing the vibration (noise) generated in the device. In

Art Unit: 2652

thus constructed device, the resonators selectively reduce noise of a predetermined frequency band; and it is also well known in the art that the predetermined frequency band is inherently determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Claim 5, as described above, Morinaka and park et al show a disk drive including: a disk tray that slides in and out of the disk drive and on which a disk is placed; a disk driving portion rotating the disk at a predetermined speed, and one or more resonators installed on a lower surface of the disk tray to selectively reduce noise of a predetermined frequency band. Park further shows a disk chucking apparatus 57 holding the disk on the disk driving portion; a data recording/reproducing unit 55 recording data on the disk or reproducing data from the disk.

Claim 6, as described above, Morinaka and park et al show each of the one or more resonators comprises: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of each resonator; and a resonance container surrounding the through hole and having a predetermined volume, the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and a volume of the resonance container.

Claim 9, as described above, Morinaka and Park et al shows a resonator for a disk tray of a disk drive, including: a through hole penetrating the disk tray and operating as an entrance and a bottle neck of the resonator: and a resonance container surrounding the through hole and having a predetermined volume, the resonator being mounted on the disk tray to selectively reduce noise of a predetermined frequency band, the predetermined frequency band being determined

Art Unit: 2652

according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and the volume of the resonance container, wherein the resonator inherently converts sound energy to thermal energy to reduce a sound pressure level of a resonance frequency to selectively absorb a specific frequency.

Claims 3 and 7, Park et al further shows that the resonator further includes an absorbing member (air) filling the resonance container ([0030]).

Claims 4 and 8, Park et al further shows a bottom surface of the resonance container is open (Fig. 5).

Allowable Subject Matter

2. Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With regard to claim 10, as the closest reference, the combination of Morinaka (JP 8-203259A) and Park et al (EP 1 207 532 A2) shows a resonator having a resonance container for a disk tray, which is being mounted on the disk tray to selectively reduce noise of a predetermined frequency band, the predetermined frequency band being determined according to an area of a profile of the through hole, a length of the bottle neck of the through hole, and the volume of the resonance container, an absorbing member filling the resonance container to selectively reduce noise of a frequency band; **but fails to show** the absorbing member filling the resonance container to selectively reduce noise of a frequency band higher than the predetermined frequency band.
- Applicant asserts that 10012) the present invention to provide a disk drive having a structure that reduces or removes the dominant noise frequency band

which occurs at the peak sound pressure level, from the noise in the disk drive, and also to reduce the overall level of noise ([0012]).

Response to Arguments

3. Applicant's arguments filed 08/17/2005 have been fully considered but they are not persuasive.

- It is well known in the art that damper always has resonant frequencies and is a resonator. Evidence supporting this argument can be found in US 6,005,749 to Ikuta et al, column 16, lines 6-7).
- Motivations for combining references have been presented clearly in the rejection. Applicant has not presented any proper reason against the motivation.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 6,005,749 to Ikuta et al shows a resonant frequency of a damper in column 16, lines 6-7.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and

Art Unit: 2652

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER